Ryan Instruments

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MARKET: Underwater scientific research.

CUSTOMER: Massachusetts Division of Marine Fisheries.

PROBLEM: The fisheries division wanted to study the relationship between underwater temperature fluctuations and lobster growth. Marine biologists needed a time/temperature monitor (TTM) that was accurate, waterproof, flexible and rugged -- all at a reasonable cost due to a limited state budget.

APPLICATION: Seven of Ryan's TempMentors™ are currently located in Massachusetts coastal waters, at depths ranging from 30 to 120 feet. The monitors are programmed to take temperature readings once every two hours. The fisheries division successfully deployed one TTM in the ocean for 20 months. It withstood the ordeals of time, salt water, algae and barnacle build-up.

BENEFIT: Marine biologists have learned that cold northeast surface winds affect water temperatures as deep as 120 feet below the surface -- much deeper than they had anticipated. Water temperature is directly related to lobster growth: the warmer the water, the faster the lobsters mature.

CONCLUSION: When the underwater research is completed, officials at the Mass. Division of Fisheries hope to use TTMs in predicting the abundance of adult lobsters for each coming season. "This sort of temperature information would be helpful to lobster fishermen," says Bruce Estrella, a Senior Marine Fisheries Biologist. "They might scale back or go after another seafood if they know it's going to be a poor year for lobsters. On the other hand, if they know it's going to be a good year, then they can gear up. They can alter their behavior to their benefit."